

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,895,081 B1  
APPLICATION NO. : 09/294563  
DATED : May 17, 2005  
INVENTOR(S) : Kurt E. Schmidt, David J. Groessl and Yun Zhang

Page 1 of 5

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

**In the Specification:**

Column 4, line 62, delete "Appendix" and insert therefore --Table--

Column 5, before line 1 insert:

**--Table 1**

f:

150, 600, 1050, 1500, 1950, 2400, 2850, 3300, 3750, 4200, 4650, 5100, 5550, 6000, 6450, 6900, 7350, 7800, 8250, 8700, 9150, 9600, 10050, 10500, 10950, 11400, 11850, 12300, 12750, 13200, 13650, 14100, 14550, 15000, 15450, 15900, 16350, 16800, 17250, 17700, 18150, 18600, 19050, 19500, 19950.

N:

1, 4, 7, 10, 13, 16, 19, 22, 25, 28, 31, 34, 37, 40, 43, 46, 49, 52, 55, 58, 61, 64, 67, 70, 73, 76, 79, 82, 85, 88, 91, 94, 97, 100, 103, 106, 109, 112, 115, 118, 121, 124, 127, 130, 133 respectively.

$\Psi$ :

5.9738, 1.3564, 2.4683, 4.8575, 4.7434, 2.2972, 4.6015, 1.9156, 2.5660, 4.5986, 4.6452, 3.4542, 3.6341, 0.8848, 4.3410, 2.1606, 4.2342, 4.2147, 3.1058, 5.909, 5.2782, 5.1159, 5.4354, 5.6124, 0.5751, 3.8940, 3.3812, 6.0230, 2.3239, 2.7284, 4.8032, 4.1488, 2.3427, 4.6362, 0.9163, 2.9335, 1.0363, 2.3272, 3.2040, 4.0025, 2.0028, 5.8444, 2.4525, 1.4760, 1.770 --

Column 5, line 67 delete "Appendix" and insert therefore --Table--.

Column 6, line 1 delete "Appendix" and insert therefore --Table--.

Column 6, following line 3, insert:

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It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

**--Table 2**

**30Hz Raw Measurements:**

Ytr(30) – Admittance tip-to-ring measured at 30Hz  
Ytg(30) – Admittance tip-to-ground measured at 30Hz  
Yrg(30) – Admittance ring-to-ground measured at 30Hz

**30Hz Derived Measurements:**

30Gtr – Conductance tip-to-ring measured at 30Hz =  $\text{real}(Y_{tr}(30))$   
30Str – Susceptance tip-to-ring measured at 30Hz =  $\text{imag}(Y_{tr}(30))$   
30Gtg – Conductance tip-to-ground measured at 30Hz =  $\text{real}(Y_{tg}(30))$   
30Stg – Susceptance tip-to-ground measured at 30Hz =  $\text{imag}(Y_{tg}(30))$   
30Ctr – Capacitance tip-to-ring measured at 30Hz =  $St(30)/(2 \cdot \pi \cdot 30)$   
30Ctg – Capacitance tip-to-ground measured at 30Hz =  $St(30)/(2 \cdot \pi \cdot 30)$   
Lmeas – Length in kft measured at 30Hz =  $30Ctg/17.47$

**150Hz-20KHz Raw Measurements:**

Ytr(f) – Admittance tip-to-ring where  $f=150\text{Hz}, 600\text{Hz}, 1050\text{Hz}, 1500\text{Hz}, \dots 19950\text{Hz}$   
Ytg(f) – Admittance tip-to-ground where  $f=150\text{Hz}, 600\text{Hz}, 1050\text{Hz}, 1500\text{Hz}, \dots 19950\text{Hz}$   
Yrg(f) – Admittance ring-to-ground where  $f=150\text{Hz}, 600\text{Hz}, 1050\text{Hz}, 1500\text{Hz}, \dots 19950\text{Hz}$

**150Hz-20KHz Derived Measurements:**

150Gtr – Conductance tip-to-ring measured at 150Hz =  $\text{real}(Y_{tr}(150))$   
600Gtr – Conductance tip-to-ring measured at 600Hz =  $\text{real}(Y_{tr}(600))$

19950Gtr – Conductance tip-to-ring measured at 19950Hz =  $\text{real}(Y_{tr}(19950))$

150Str – Susceptance tip-to-ring measured at 150Hz =  $\text{imag}(Y_{tr}(150))$   
600Str – Susceptance tip-to-ring measured at 600Hz =  $\text{imag}(Y_{tr}(600))$

19950Str – Susceptance tip-to-ring measured at 19950Hz =  $\text{imag}(Y_{tr}(19950))$

150Gtg – Conductance tip-to-ground measured at 150Hz =  $\text{real}(Y_{tg}(150))$   
600Gtg – Conductance tip-to-ground measured at 600Hz =  $\text{real}(Y_{tg}(600))$

19950Gtg – Conductance tip-to-ground measured at 19950Hz =  $\text{real}(Y_{tg}(19950))$

150Stg – Susceptance tip-to-ground measured at 150Hz =  $\text{imag}(Y_{tg}(150))$   
600Stg – Susceptance tip-to-ground measured at 600Hz =  $\text{imag}(Y_{tg}(600))$

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19950Stg – Susceptance tip-to-ground measured at 19950Hz =  $\text{imag}(\text{Ytg}(19950))$

150Ctr – Capacitance tip-to-ring measured at 150Hz =  $150\text{Str}/(2*\pi*150)$

600 Ctr – Capacitance tip-to-ring measured at 600Hz =  $600\text{Str}/(2*\pi*600)$

19950Ctr – Capacitance tip-to-ring measured at 19950Hz =  $9950\text{Str}/(2*\pi*19950)$

150Ctg – Capacitance tip-to-ground measured at 150Hz =  $150\text{Stg}/(2*\pi*150)$

600Ctg – Capacitance tip-to-ground measured at 600Hz =  $600\text{Stg}/(2*\pi*600)$

19950Ctg – Capacitance tip-to-ground measured at 19950Hz =  $19950\text{Stg}/(2*\pi*19950)$

**150Hz-20KHz Secondary Derived Measurements:**

C30/C4K – Ratio of tip-to-ground Capacitance at 30Hz to 4200Hz

C4K/C10K – Ratio of tip-to-ground Capacitance at 4200Hz to 10050Hz

Cslope – Tip-to-ground Capacitance ratio slope =  $(\text{C4K}/\text{C10K})/(\text{C30}/\text{C4K})$

C30-C4K – Difference in tip-to-ground Capacitance at 30Hz and 4200Hz

C4K-C10K – Difference in tip-to-ground Capacitance at 4200Hz and 10050Hz

Cdelta – Tip-to-ground Capacitance difference delta =  $(\text{C4K}-\text{C10K})/(\text{C30}-\text{C4K})$

G4K-G30 – Ratio of tip-to-ground Conductance at 4200Hz and 30Hz

G10K-G4K – Ratio in tip-to-ground Conductance at 10050Hz and 4200Hz

Gslope – Tip-to-ground Conductance ratio slope =  $(\text{G10K}/\text{G4K})/(\text{G4K}/\text{G30})$

G4K-G30 – Difference in tip-to-ground Conductance at 30Hz and 4200Hz

G10K-G4K – Difference in tip-to-ground Conductance at 4200Hz and 10050Hz

Gdelta – Tip-to-ground Conductance difference delta =  $(\text{G10K}-\text{G4K})/(\text{G4K}-\text{G30})$

C30/G30 – Ratio of Tip-to-ground Capacitance to Conductance at 30Hz

C30/G4K – Ratio of Tip-to-ground Capacitance at 30Hz to Conductance at 4200Hz

C4K/G4K – Ratio of Tip-to-ground Capacitance to Conductance at 4200Hz

Gtr\_dmax – Maximum positive slope of  $\text{Gtr}(f) = \max(\text{derivative}(\text{Gtr}(f)/df))$

Gtr\_fmax – Frequency at which Gtr\_dmax occurs

Gtr\_dmin – Maximum negative slope of  $\text{Gtr}(f) = \min(\text{derivative}(\text{Gtr}(f)/df))$

Gtr\_fmin – Frequency at which Gtr\_dmin occurs

Gtr\_fpk – Frequency of first peak (local maxima) in  $\text{Gtr}(f)$

Gtr\_fval – Frequency of first valley (local minima) in  $\text{Gtr}(f)$

Gtr\_d\_delta – Gtr Max/Min Derivative difference =  $\text{Gtr\_dmax}-\text{Gtr\_dmin}$

Gtr\_pk\_delta – Gtr peak/valley frequency difference =  $\text{Gtr\_fval}-\text{Gtr\_fpk}$

Gtr\_pk – Value of  $\text{Gtr}(f)$  at frequency Gtr\_fpk

Gtr\_val – Value of  $\text{Gtr}(f)$  at frequency Gtr\_fval

Gtr\_delta – Gtr peak/valley difference =  $\text{Gtr\_pk}-\text{Gtr\_val}$

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Gtg\_dmax – Maximum positive slope of Gtg(f) =  $\max(\text{derivative}(\text{Gtg}(f)/df))$   
Gtg\_fmax – Frequency at which Gtg\_dmax occurs  
Gtg\_dmin – Maximum negative slope of Gtg(f) =  $\min(\text{derivative}(\text{Gtg}(f)/df))$   
Gtg\_fmin – Frequency at which Gtg\_dmin occurs  
Gtg\_d\_delta – Gtg Max/Min Derivative difference = Gtg\_dmax-Gtg\_dmin

Ctr\_dmax – Maximum positive slope of Ctr(f) =  $\max(\text{derivative}(\text{Ctr}(f)/df))$   
Ctr\_fmax – Frequency at which Ctr\_dmax occurs  
Ctr\_dmin – Maximum negative slope of Ctr(f) =  $\min(\text{derivative}(\text{Ctr}(f)/df))$   
Ctr\_fmin – Frequency at which Ctr\_dmin occurs  
Ctr\_fpk – Frequency of first peak (local maxima)in Ctr(f)  
Ctr\_fval – Frequency of first valley(local minima)in Ctr(f)  
Ctr\_d\_delta – Ctr Max/Min Derivative difference = Ctr\_dmax-Ctr\_dmin  
Ctr\_pk\_delta – Ctr peak/valley frequency difference = Ctr\_fval-Ctr\_fpk  
Ctr\_val – Value of Ctr(f) at frequency Ctr\_fval

Ctg\_dmax – Maximum positive slope of Ctg(f) =  $\max(\text{derivative}(\text{Ctg}(f)/df))$   
Ctg\_fmax – Frequency at which Ctg\_dmax occurs  
Ctg\_dmin – Maximum negative slope of Ctg(f) =  $\min(\text{derivative}(\text{Ctg}(f)/df))$   
Ctg\_fmin – Frequency at which Ctg\_dmin occurs  
Ctg\_d\_delta – Ctg Max/Min Derivative difference = Ctg\_dmax-Ctg\_dmin

Str\_dmax – Maximum positive slope of Str(f) =  $\max(\text{derivative}(\text{Str}(f)/df))$   
Str\_fmax – Frequency at which Str\_dmax occurs  
Str\_dmin – Maximum negative slope of Str(f) =  $\min(\text{derivative}(\text{Str}(f)/df))$   
Str\_fmin – Frequency at which Str\_dmin occurs

**150Hz-20Hz Secondary Derived Measurements:**

Str\_fpk – Frequency of first peak (local maxima)in Str(f)  
Str\_fval – Frequency of first valley(local minima)in Str(f)  
Str\_d\_delta – Str Max/Min Derivative difference = Str\_dmax-Str\_dmin  
Str\_pk\_delta – Str peak/valley frequency difference = Str\_fval-Str\_fpk  
Str\_pk – Value of Str(f) at frequency Str\_fpk  
Str\_val – Value of Str(f) at frequency Str\_fval  
Str\_delta – Str peak/valley difference = Str\_pk-Str\_val

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Stg\_dmax – Maximum positive slope of Stg(f) = max(derivative (Stg(f)/df))

Stg\_fmax – Frequency at which Stg\_dmax occurs

Stg\_dmin – Maximum negative slope of Stg(f) = min(derivative (Stg(f)/df))

Stg\_fmin – Frequency at which Stg\_dmin occurs

Stg\_fpk – Frequency of first peak (local maxima) in Stg(f)

Stg\_fval – Frequency of first valley (local minima) in Stg(f)

Stg\_d\_delta – Stg Max/Min Derivative difference = Stg\_dmax-Stg\_dmin

Stg\_pk\_delta – Stg peak/valley frequency difference = Stg\_fval-Stg\_fpk

Gtg20k/Gtg8k – Ratio of Gtg at 19950Hz and 8250Hz

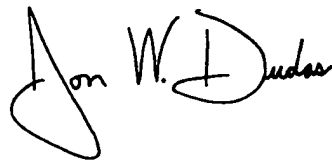
Gtg20k/Gtg4k – Ratio of Gtg at 19950Hz and 4200Hz

Cgt30/Cgt20k – Ratio of Ctg at 30Hz and 19950Hz

Cgt30/Cgt8k – Ratio of Ctg at 30Hz and 8250Hz--

Signed and Sealed this

First Day of January, 2008



JON W. DUDAS  
*Director of the United States Patent and Trademark Office*